FINAL TECHNICAL REPORT

on

A THIRD WORKSHOP ON RELIABILITY OF NONLINEAR OCEAN STRUCTURES UNDER STOCHASTIC EXCITATION

RESEARCH PROJECT N00014-95-1-0354

Submitted to

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11 Jul 97

From: Director, Office of Naval Research, Seattle Regional Office, 1107 NE 45th St., Suite 350, Seattle, WA 98105
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Subj: RETURNED GRANTEE/CONTRACTOR TECHNICAL REPORTS

1. This confirms our conversations of 27 Feb 97 and 11 Jul 97. Enclosed are a number of technical reports which were returned to our agency for lack of clear distribution availability statement. This confirms that all reports are unclassified and are "APPROVED FOR PUBLIC RELEASE" with no restrictions.

2. Please contact me if you require additional information. My e-mail is *silverr@onr.navy.mil* and my phone is (206) 625-3196.

ROBERT J. SILVERMAN

TITLE: A Third Workshop on Reliability of Nonlinear Ocean Structures Under Stochastic Excitation

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Technical Objective:

The objective of the third workshop was to facilitate the advancement of the state of knowledge on the behavior of nonlinear ocean structures under stochastic excitation. The emphasis of the workshop was on the response characteristics of significance for reliability analysis. The workshop would provide a forum for: (1) ONR supported researchers under the program on "Reliability of Nonlinear Ocean Structures Under Stochastic Excitation" and experienced Navy personnel to hold discussions and exchange ideas on current Naval needs and new research ideas and directions; and (2) the coordination of research efforts among physics, mathematical sciences, and engineering researchers under the program to achieve cross-field synergistic effects.

Approach:

The approach was to hold a workshop to provide a forum for the PI's and related personnel in the reliability program. Specifically, all ONR PI's directly supported under the program, other ONR supported PI's on related research topics, and personnel from various Naval centers including ONR, David Taylor Model Basin, Naval Surface Warfare Center, Naval Sea Systems Command, and Naval Facilities Engineering Service Center were invited to participate. A combined list of participants of the first and second workshops is provided in the Appendix.

Accomplishment: A successful workshop was held on 24-25 July 1995. PI's in mathematics, physical sciences, and engineering directly supported under the program gave presentations of their research progress and discussed their specific approaches and plans for the immediate year. ONR and other Navy personnel presented state-of-the-art theoretical and practical procedures for analysis and design of naval systems and immediate research needs for their reliability analysis. A general discussion session was held immediately after the presentations on the second day. Focus of the discussion was on naval systems modeled as stochastic differential equations with excitations that were non-Gaussian processes describing wind, wave, and current effects. The two-day workshop achieved it goals of facilitating technical knowledge exchange and the fine-tuning of the research focuses of the individual PI's in the program. A proposal for continuing the workshop in 1996 is being planned by a joint committee involving members from several universities to continue the exchange of ideas and update research progress among all the current participants as well as other national and international researchers interested in the subject.

Appendix:

COMBINED LIST OF FIRST, SECOND AND THIRD WORKSHOP PARTICIPANTS

Julia Abrahams, Office of Naval Research
John Barnett, Naval Surface Warfare Center
Haym Benaroya, Rutgers University
G. Q. Cai, Florida Atlantic University
Patricia Carter, Naval Surface Warfare Center
Paul Chow, Wayne State University
C. Allin Cornell, Stanford University
John F. Dalzell, Naval Surface Warfare Center
Robert Davey, Naval Sea Systems Command
Michel Dimentberg, Worcester Polytechnic Institute
Mingzhou Ding, Florida Atlantic University
Scott Dobson, Worcester Polytechnic Institute
Allen Engle, Naval Sea Systems Command
Jeff Falzarano, University of New Orleans
Jim Fein, Office of Naval Research
Michael R. Frey, Bucknell University
Allen Goldberg, Naval Research Lab
Bobert Gover, Naval Research Lab
Steve Hammel, Naval Surface Warfare Center
Arthur Heinricher, Worcester Polytechnic Institute
Conor Heneghan, Columbia University
Zhikun Hou, Worcester Polytechnic Institute
Raouf Ibrahim, Wayne State University
Satish Iyengar, University of Pittsburgh
Ahsan Kareem, Notre Dame University
Ben Kedem, University of Maryland
Rafail Khas'minskii, Wayne State University
Wolfgang Kliemann, Iowa State University
Ross Leadbetter, University of North Carolina
Shan Lin, Iowa State University
Y. K. Lin, Florida Atlantic University
Georg Lindgren, University of North Carolina
L. Felipe Martins, Worcester Polytechnic Institute

Peter Majumdar, Office of Naval Research
Dan Maudlin, University of North Texas
Kathryn McCreight, Office of Naval Research
Michael Monticino, University of North Texas
John M. Niedzwecki, Texas A & M University
Mohammad Noori, Worcester Polytechnic Institute
Paul Palo, Naval Facilities Engineering Service Center
Nathan Platt, Naval Surface Warfare Center
Angel Crespo Qatz, University of Puerto Rico
Roger Pettersson, University of North Carolina at Chapel Hill
Steve Ramberg, Office of Naval Research
Bill Richardson, David Taylor Model Basin
John Rosborough, Naval Sea Systems Command
Igor Rychlik, University of North Carolina
Mike Shlesinger, Office of Naval Research
Emil Simiu, National Institute of Standards & Technology
Nozer D. Singpurwalla, George Washington University
Tom Swean, Office of Naval Research
Michael Tognarelli, University of Notre Dame
Armin W. Troesch, University of Michigan
David A. Walden, Naval Surface Warfare Center
Timonthy Whalen, National Institute of Standards & Technology
Bruce West, University of North Texas
Steven R. Winterstein, Stanford University
Solomon C. S. Yim, Oregon State University